UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,160	06/27/2001	David J. Metcalfe	XXT-053/D99821	5213

7590 04/02/2007

Patrick R Roche
Fay Sharpe Fagan Minnich & McKee LLP
1100 Superior Avenue 7th Floor
Cleveland, OH 44114-2579

EXAMINER	
THOMPSON, JAMES A	
ART UNIT	**PAPER NUMBER**
2625	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)
	09/894,160	METCALFE ET AL.
	Examiner	Art Unit
	James A. Thompson	2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 8-10, filed 02 February 2007, with respect to the rejection of claims 24-43 under 35 USC §101 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection is made in view of newly discovered prior art. In light of the newly discovered prior art, the previously noted allowable subject matter is withdrawn and new prior art rejections are set forth detail below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 25-27 and 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azumaya (US Patent 5,465,307) in view of Farber (US Patent 5,978,791) and Liguori (US Patent 5,912,672).

Regarding claim 25: Azumaya discloses performing a first-pass processing (column 14, lines 28-34 of Azumaya) in a selected direction (column 15, lines 43-50 of Azumaya). The area of an image is processed to determine an area flag (column 14, lines 28-34 of Azumaya) in a first pass in a main-scanning to provide provisional area data (column 15, lines 43-50 of Azumaya).

Azumaya discloses that the first-pass processing comprises determining a first segment tag (figure 21(a("#1 AR Flag")) and column 14, lines 21–25 of Azumaya) for a first line segment on a first line parallel to a first axis (column 14, lines 23-25 of Azumaya); and writing a first identifier into a first memory location and assigning said first identifier to said first line segment (column 14, lines 28-34 of Azumaya). In order for said first identifier to be assigned to said first line segment (column 14, lines 28-34 of Azumaya), said first identifier must inherently be written to a memory location. Said memory location can be referred to as the first memory location since this is merely a descriptive designation.

Azumaya discloses that the first-pass processing further comprises determining a second segment tag (figure 21(a("#7 AR Flag")) and column 14, lines 21–25 of Azumaya) for a second line segment on a second line parallel and proximate to said first line (figure 21(a) and column 14, lines 23-25 of Azumaya).

Azumaya further discloses that each segment of image data is associated with an area flag (figure 21(a) and column 14, lines 28-34 of Azumaya), and therefore said first identifier must inherently be written to said first memory location and said second identifier must inherently be written to a second memory location. If the first segment tag equals the second segment tag, then the identifier that is written to said second memory location is the same as the identifier that is written to said first memory location. Therefore, if said first segment tag equals said second segment tag, said first identifier is written to said second memory location. If, however, said first segment tag does not equal said second segment tag, then the identifier that is written to said second memory location is different than the identifier that is written to said first memory location. Therefore, a second identifier is written into a second memory location. Said second identifier is assigned to said second line segment (figure 21(a("#7 AR Flag")) and column 14, lines 28-34 of Azumaya).

Azumaya discloses that the first-pass processing further comprises reading a first memory location to determine a first memory location content (column 14, lines 28-30 and lines 35-38 of Azumaya); storing a graphical representation of the image in a page storage buffer (column 14, lines 29-34 of Azumaya); generating a windowed image (figure 24 of Azumaya) by performing a second-pass processing of the stored graphical representation of the image based on the written identifiers of the first-pass processing (column 15, lines 49-64 of Azumaya); and outputting the windowed image to at least one of a printed image and a digital image displayed on an output device (figure 2 and column 4, lines 29-36 of Azumaya).

Azumaya does not disclose expressly automatically determining window regions in the image without user assistance by performing said first-pass processing; that said second line segment overlaps a position of said first line segment along said first axis; pointing to a further memory location corresponding to said first memory location content; if said first memory location content does not point to said first memory location, reading a further memory location content of said further memory location; continuing to point to succeeding memory locations until a memory location content points to its own memory location and designating said memory location as a base identifier; and writing said base identifier to said first memory location.

Farber discloses pointing to a further memory location corresponding to a first memory location content (column 17, lines 19-23 of Farber); if said first memory location content does not point to said

first memory location, reading a further memory location content of said further memory location (column 17, lines 28-30 of Farber); continuing to point to succeeding memory locations until a memory location content points to its own memory location and designating said memory location as a base identifier (column 17, lines 28-30 and lines 37-41 of Farber); and writing said base identifier to said first memory location (column 17, lines 41-45 of Farber).

Azumaya and Farber are combinable because they are from similar problem solving areas, namely data identification tag searching and sorting. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a search for the base identifier ("True File" data) until the location corresponding to the first identifier ("True Name") is found, as taught by Farber. The motivation for doing so would have been to improve the design and storage of the system used to store the relevant digital data by allowing the system to only store one copy of any data item (column 3, lines 42-50 of Farber). Therefore, it would have been obvious to combine Farber with Azumaya.

Azumaya in view of Farber does not disclose expressly automatically determining window regions in the image without user assistance by performing said first-pass processing; and that said second line segment overlaps a position of said first line segment along said first axis.

Liguori discloses automatically determining window regions in the image without user assistance by performing first-pass processing (figure 2 and column 4, lines 6-14 of Liguori); and a second image segment that overlaps a first image segment along a first axis (figure 6 and column 4, lines 44-56 of Liguori).

Azumaya in view of Farber is combinable with Liguori because they are from the same field of endeavor, namely processing and rendering digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to determine the window region automatically and to process overlapping image segments, as taught by Liguori. The motivation for doing so would have been that automatic processing is faster and more efficient than user assisted processing, and input image data often has multiple objects overlapping one another. Therefore, it would have been obvious to combine Long with Azumaya in view of Farber to obtain the invention as specified in claim 25.

Regarding claim 26: Azumaya discloses determining a location of a third line segment (figure 20(580) of Azumaya) by identifying said third line segment on one of said first line and said second line (column 14, lines 9-12 of Azumaya), as contiguous with one of the group of said first line segment and said second line segment (figure 20(c) of Azumaya) extending a lesser distance in a first direction along said first axis such that said third line segment overlaps a position of the other of said group of said first line segment and said second line segment along said first axis (figure 20 and column 14, lines 9-12 of

Azumaya). As can clearly be seen in figure 20 of Azumaya, said third line segment (figure 20(580) of Azumaya) is contiguous with the second line segment, extends a lesser distance in the main-scan direction as the second line segment, and overlaps the first line segment.

Regarding claim 27: Azumaya discloses that said first line segment (figure 21(a("#1 AR Flag")) of Azumaya) and said second line segment (figure 21(a("#1 AR Flag")) of Azumaya) are contiguous, as is clearly demonstrated in figure 21(a) of Azumaya.

Regarding claim 29: Azumaya discloses that the image data is processed at intervals of a preset number of pixels in the main-scan and a preset number of pixels in the sub-scan directions (column 10, lines 47-54 of Azumaya). Therefore, for a sub-scan sampling length of one pixel, all line segments on said first scan line and all line segments on said second scan line are processed before processing line segments on a different scan line (column 10, lines 47-54 of Azumaya).

Regarding claim 30: Azumaya discloses an apparatus (figure 1 of Azumaya) comprising a memory (figure 4(43) of Azumaya) adapted to store at least one of the group of a first identifier of a first line segment on a first line and a second identifier of a second line segment on a second line and storing the image in a page storage buffer portion of the memory (column 14, lines 29-34 of Azumaya); and a processor (figure 1(214) of Azumaya) coupled to said memory and adapted to, in a first-pass processing while the image is being received (column 14, lines 28-34 and column 15, lines 43-50 of Azumaya), forming and frequently updating an identifier equivalence table (main-scan history and sub-scan history) (column 15, lines 8-15 and lines 24-29 of Azumaya), and determining a first segment tag for said first line (column 14, lines 28-34 of Azumaya). Since said memory (figure 4(43) of Azumaya) is a part of the color circuit (figure 1(204) and column 14, lines 30-32 of Azumaya) and said color circuit is a part of said processor (as shown in figure 1 of Azumaya), said processor is coupled to said memory.

Azumaya further discloses that said first line and said second line are parallel to a first axis (column 14, lines 23-25 of Azumaya). Said first line and said second line are in the main scan direction (column 14, lines 23-25 of Azumaya) and thus parallel to a first axis.

Azumaya further discloses that said processor is further adapted to store received portions of the image in a page storage buffer portion of the memory thereby generating a stored graphical representation of the image (column 14, lines 29-34 of Azumaya).

Azumaya further discloses that said processor is further adapted to perform a second-pass processing to produce a windowed image (figure 24 of Azumaya) based on the stored graphical representation of the image and determinations and searches of the first-pass processing (column 15, lines 49-58 of Azumaya).

Azumaya further discloses an output device (figure 2 of Azumaya) adapted to receive the windowed image and produce at least one of a printed image and a digital image displayed on the output device (column 4, lines 29-36 of Azumaya).

Azumaya does not disclose expressly automatically determining window regions in the image without user assistance; comparing said first identifier to said second identifier; determining that said first line segment is eligible for a base identifier search if said first identifier does not equal said second identifier; conducting a base identifier search for said first line segment; and that said first line segment overlaps said second line segment.

Farber discloses comparing a first identifier to a second identifier (column 17, lines 14-16 and lines 19-21 of Farber); and if said first identifier does not equal said second identifier, conducting a base identifier search to determine a base identifier for a corresponding first data element (column 17, lines 28-30 of Farber). A first identifier, referred to as a "True Name" (column 6, lines 6-10 of Farber), is compared with a second identifier, specifically the first entry in the True File Registry (column 17, lines 14-16 and lines 19-21 of Farber). If said first identifier do not match, the search continues until the base identifier of the first data element is found (column 17, lines 28-30 of Farber).

Azumaya and Farber are combinable because they are from similar problem solving areas, namely data identification tag searching and sorting. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use identifying tags as a means to point to stored data and search for said stored data, as taught by Farber. The first data element of Farber corresponds to said first line segment of Azumaya. The motivation for doing so would have been to improve the design and storage of the system used to store the relevant digital data by allowing the system to only store one copy of any data item (column 3, lines 42-50 of Farber). Therefore, it would have been obvious to combine Farber with Azumaya.

Azumaya in view of Farber does not disclose expressly automatically determining window regions in the image without user assistance; and that said first line segment overlaps said second line segment.

Liguori discloses automatically determining window regions in the image without user assistance by performing first-pass processing (figure 2 and column 4, lines 6-14 of Liguori); and a second image segment that overlaps a first image segment along a first axis (figure 6 and column 4, lines 44-56 of Liguori).

Azumaya in view of Farber is combinable with Liguori because they are from the same field of endeavor, namely processing and rendering digital image data. At the time of the invention, it would

have been obvious to a person of ordinary skill in the art to determine the window region automatically and to process overlapping image segments, as taught by Liguori. The motivation for doing so would have been that automatic processing is faster and more efficient than user assisted processing..and input image data often has multiple objects overlapping one another. Therefore, it would have been obvious to combine Long with Azumaya in view of Farber to obtain the invention as specified in claim 30.

Regarding claim 31: Azumaya discloses reading a first memory location to determine a first memory location content (column 14, lines 28-30 and lines 35-38 of Azumaya).

Azumaya does not disclose expressly pointing to a further memory location corresponding to said first memory location content; if said first memory location content does not point to said first memory location, reading a further memory location content of said further memory location; continuing to point to succeeding memory locations until a memory location content points to its own memory location and designating said memory location as a base identifier; and writing said base identifier to said first memory location.

Farber discloses pointing to a further memory location corresponding to a first memory location content (column 17, lines 19-23 of Farber); if said first memory location content does not point to said first memory location, reading a further memory location content of said further memory location (column 17, lines 28-30 of Farber); continuing to point to succeeding memory locations until a memory location content points to its own memory location and designating said memory location as a base identifier (column 17, lines 28-30 and lines 37-41 of Farber); and writing said base identifier to said first memory location (column 17, lines 41-45 of Farber).

Azumaya and Farber are combinable because they are from similar problem solving areas, namely data identification tag searching and sorting. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a search for the base identifier ("True File" data) until the location corresponding to the first identifier ("True Name") is found, as taught by Farber. The motivation for doing so would have been to improve the design and storage of the system used to store the relevant digital data by allowing the system to only store one copy of any data item (column 3, lines 42-50 of Farber). Therefore, it would have been obvious to combine Farber with Azumaya to obtain the invention as specified in claim 31.

Regarding claim 32: Azumaya discloses processing the overall image by sampling the image data in blocks of six pixels in the main-scan direction and two pixels in the sub-scan direction (column 14, lines 18-21 of Azumaya). The first line is therefore the first line of the block and the second line is the second line of the block. Since said blocks are processed throughout the entire image, a first scan line

of a page of said image data is said first line and a last scan line of said page of said image data is said second line and all remaining scan lines of said page of said image are selectively, alternatively designated as said first line and said second line during processing (column 14, lines 18-27 of Azumaya).

Regarding claim 33: Azumaya discloses that said first line segment (figure 21(a("#1 AR Flag")) of Azumaya) and said second line segment (figure 21(a("#1 AR Flag")) of Azumaya) are contiguous, as is clearly demonstrated in figure 21(a) of Azumaya.

Regarding claims 34-35: Azumaya discloses an input device coupled to said processor to enable said processor to determine said first segment tag, wherein said input device is a scanner (column 4, lines 9-18 of Azumaya).

4. **Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Azumaya (US Patent 5,465,307) in view of Farber (US Patent 5,978,791) and Liguori (US Patent 5,912,672) as applied to claim 25 above, and further in view of Holcomb (US Patent 5,790,133).**

Regarding claim 28: Azumaya in view of Farber and Liguori does not disclose expressly that said first identifier is stored in a first side of a ping pong memory and said second identifier is stored in a second side of a ping pong memory.

Holcomb discloses using ping pong memory to store two parts of memory data (figure 4(42,44) of Holcomb), one in each side of said ping pong memory (column 4, lines 52-59 of Holcomb).

Azumaya in view of Farber and Liguori is combinable with Holcomb because they are from similar problem solving areas, namely the storage of multiple units of data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use ping pong memory to store two elements of memory, a first memory element on one side of said ping pong memory, and a second memory element on the other side of said ping pong memory, as taught by Holcomb. Said first memory element would therefore correspond to said first identifier and said second memory element would correspond to said second identifier. The motivation for doing so would have been to speed up the memory read/write operations (column 4, lines 58-61 of Holcomb). Therefore, it would have been obvious to combine Holcomb with Azumaya in view of Farber and Liguori to obtain the invention as specified in claim 28.

5. Claims 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azumaya (US Patent 5,465,307) in view of Liguori (US Patent 5,912,672).

Regarding claim 36: Azumaya discloses performing a first-pass processing (column 14, lines 28-34 of Azumaya) in a selected direction (column 15, lines 43-50 of Azumaya). The area of an image is processed to determine an area flag (column 14, lines 28-34 of Azumaya) in a first pass in a main-scanning to provide provisional area data (column 15, lines 43-50 of Azumaya).

Azumaya discloses that the first-pass processing comprises determining a pixel tag corresponding to a pixel content type of a pixel of a first row (figure 17 and column 13, lines 39-44 of Azumaya). A row of pixels (figure 17("nth line") of Azumaya) is read and stored (column 13, lines 28-31 of Azumaya) and used to determine a pixel tag corresponding to pixel content type (texture) (column 13, lines 39-44 of Azumaya).

Azumaya discloses that the first-pass processing further comprises determining a pixel identifier (AR flag) based on said pixel tag (column 13, lines 39-44 of Azumaya) and pixel identifiers of neighboring pixels in said first row and in a neighboring second row (figure 21(c) and column 14, lines 20-27 of Azumaya); forming line segments of neighboring pixels of said first row (figure 21(b) of Azumaya) having common pixel identifiers (column 15, lines 42-50 of Azumaya); and reviewing line segments of said second row and said first row to associate line segments of said second row neighboring line segments of said first row and having common pixel tags (figure 21(c); figure 27 (a); and column 16, lines 34-40 of Azumaya).

Azumaya further discloses storing a graphical representation of the image in a page storage buffer (column 14, lines 29-34 of Azumaya); performing a second-pass processing of the stored graphical representation of the image based on the identifiers and associations of the first-pass processing to produce an enhanced image (column 15, lines 49-58 of Azumaya); and outputting the windowed image to at least one of a printed image and a digital image displayed on an output device (figure 2 and column 4, lines 29-36 of Azumaya).

Azumaya does not disclose expressly automatically determining window regions in the image without user assistance by performing said first-pass processing.

Liguori discloses automatically determining window regions in the image without user assistance by performing first-pass processing (figure 2 and column 4, lines 6-14 of Liguori).

Azumaya and Liguori are combinable because they are from the same field of endeavor, namely processing and rendering digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to determine the window region automatically, as taught by Liguori.

The motivation for doing so would have been that automatic processing is faster and more efficient than user assisted processing. Therefore, it would have been obvious to combine Long with Azumaya to obtain the invention as specified in claim 36.

Regarding claim 37: Azumaya discloses, in the first-pass processing, assigning a line segment identifier (final status/ history) to each of said line segments (column 15, lines 50-54 of Azumaya), wherein said line segment identifier corresponds to said pixel identifiers (figure 21("#1 AR Flag" and "#7 AR Flag") and column 14, lines 23-27 of Azumaya) of said pixels forming each of said line segment (column 15, lines 54-58 of Azumaya). The final status/history identifier is determined based on the area determination (column 15, lines 54-58 of Azumaya). Said area determination result is given to each pixel (figure 21("#1 AR Flag" and "#7 AR Flag") and column 14, lines 23-27 of Azumaya).

Regarding claim 38: Azumaya discloses, in the first-pass processing, storing said line segment identifiers for each of said line segments in said first row and said second row in a line segment memory (column 15, lines 11-15 of Azumaya). The line segment identifiers are all stored in memory (column 15, lines 11-15 of Azumaya), which can therefore be referred to as the line segment memory.

Regarding claim 39: Azumaya discloses, in the first-pass processing, determining a provisional status/history for a line segment (column 15, lines 45-50 of Azumaya) and later updating said status/history (column 15, lines 50-54 of Azumaya). Therefore, said associations of said line segments of said second row neighboring line segments of said first row and having common pixel tags are stored, thus forming an identifier equivalence table. The memory used to store said associations is said identifier equivalence table.

Regarding claim 40: Azumaya discloses, in the first-pass processing, performing a base identifier search to group line segments (column 8, lines 37-44 of Azumaya), the base identifier search being performed selectively during an inter-scanline delay time between each scan line, or during alternate scan lines (column 8, lines 60-66 and column 13, lines 30-44 of Azumaya). The marker flags for each line are used to determine the overall image area that is enclosed by the marker that is detected, and thus searched for (column 8, lines 37-44 of Azumaya). Since said base identifier search is performed over the whole image, said base identifier search would therefore update said identifier equivalence table (status/history stored in memory) and associate line segments of at least a third row. Further, the image data is read line-by-line into a buffer and then read out of the buffer (column 8, lines 64-66 and column 13, lines 30-39 of Azumaya) and into the area recognition device (column 8, lines 60-66 of Azumaya), which then performs area recognition (column 13, lines 40-44 of Azumaya). Thus, the base identifier search occurs during the inter-scanline delay time between each scan line.

6. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Azumaya (US Patent 5,465,307) in view of Liguori (US Patent 5,912,672) and Kumashiro (US Patent 5,864,408).

Regarding claim 41: Azumaya discloses, in the first-pass processing, processing said identifier equivalence table to assign window labels, wherein each window label is associated with an area of said image having pixels of a common content type (column 8, lines 41-46 of Azumaya).

Azumaya in view of Liguori does not disclose expressly that said identifier equivalence table is processed during an interdocument delay period.

Kumashiro discloses performing image processing and correction in the interdocument delay period (figure 5a; figure 10a; and column 12, lines 28-38 of Kumashiro).

Azumaya in view of Liguori is combinable with Kumashiro because they are from the same field of endeavor, namely the correction and processing of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform image data processing in the interdocument delay period, as taught by Kumashiro, said processing being the processing of the identifier equivalence table, as taught by Azumaya, and thus following the first-pass processing and preceding the second-pass processing. Since, in Azumaya, two-pass processing is performed, the time between the first pass and second pass would be the natural time for the interdocument delay period taught by Kumashiro. The suggestion for doing so would have been that the window labels taught by Azumaya would generally be different for each scanned document sheet since each document would generally have different image data. Therefore, it would have been obvious to combine Kumashiro with Azumaya in view of Liguori to obtain the invention as specified in claim 41.

7. Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azumaya (US Patent 5,465,307) in view of Farber (US Patent 5,978,791), Liguori (US Patent 5,912,672), and Kumashiro (US Patent 5,864,408).

Regarding claim 42: Azumaya discloses producing a window retagging table (table 2 of Azumaya) for use in the second-pass processing (column 15, lines 8-15 of Azumaya), wherein the second-pass processing of the stored graphical representation of the image is based on the written identifiers of the first-pass processing and the produced window retagging table (column 15, lines 49-58 of Azumaya).

Azumaya does not disclose expressly performing an inter-document delay processing during an interdocument delay period following said first-pass processing and preceding said second-pass

processing, the interdocument delay processing including the step of reducing each of the memory location contents to a respective base identifier, and said step producing.

Farber discloses reducing each of the memory location contents to a respective base identifier (column 17, lines 37-45 of Farber).

Azumaya and Farber are combinable because they are from similar problem solving areas, namely data identification tag searching and sorting. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a reduce the contents of each of the memory locations to their respective base identifiers, as taught by Farber. The motivation for doing so would have been to improve the design and storage of the system used to store the relevant digital data by allowing the system to only store one copy of any data item (column 3, lines 42-50 of Farber). Therefore, it would have been obvious to combine Farber with Azumaya.

Azumaya in view of Farber and Liguori does not disclose expressly performing an interdocument delay processing during an interdocument delay period following said first-pass processing and preceding said second-pass processing, the interdocument delay processing including said steps of reducing and producing.

Kumashiro discloses performing image processing and correction in the interdocument delay period (figure 5a; figure 10a; and column 12, lines 28-38 of Kumashiro).

Azumaya in view of Farber and Liguori is combinable with Kumashiro because they are from the same field of endeavor, namely the correction and processing of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform image data processing in the interdocument delay period, as taught by Kumashiro, said processing being the processing of the identifier equivalence table, as taught by Azumaya, and thus following the first-pass processing and preceding the second-pass processing. Since, in Azumaya, two-pass processing is performed, the time between the first pass and second pass would be the natural time for the interdocument delay period taught by Kumashiro. The suggestion for doing so would have been that the window labels taught by Azumaya would generally be different for each scanned document sheet since each document would generally have different image data. Therefore, it would have been obvious to combine Kumashiro with Azumaya in view of Farber and Liguori to obtain the invention as specified in claim 42.

Regarding claim 43: Azumaya discloses that said processor is further adapted to produce a window retagging table (table 2 of Azumaya) for use in the second-pass processing (column 15, lines 8-15 of Azumaya), wherein the second-pass processing of the stored graphical representation of the image

is based on the determinations and searches of the first-pass processing and the produced window retagging table (column 15, lines 49-58 of Azumaya).

Azumaya does not disclose expressly that said processor is further adapted to, in an interdocument delay processing during an interdocument delay period following said first-pass processing and preceding said second-pass processing, the interdocument delay processing including the step of reducing each of the memory location contents to a respective base identifier, and said step producing.

Farber discloses reducing each of the memory location contents to a respective base identifier (column 17, lines 37-45 of Farber).

Azumaya and Farber are combinable because they are from similar problem solving areas, namely data identification tag searching and sorting. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a reduce the contents of each of the memory locations to their respective base identifiers, as taught by Farber. The motivation for doing so would have been to improve the design and storage of the system used to store the relevant digital data by allowing the system to only store one copy of any data item (column 3, lines 42-50 of Farber). Therefore, it would have been obvious to combine Farber with Azumaya.

Azumaya in view of Farber and Liguori does not disclose expressly performing an interdocument delay processing during an interdocument delay period following said first-pass processing and preceding said second-pass processing, the interdocument delay processing including said steps of reducing and producing.

Kumashiro discloses performing image processing and correction in the interdocument delay period (figure 5a; figure 10a; and column 12, lines 28-38 of Kumashiro).

Azumaya in view of Farber and Liguori is combinable with Kumashiro because they are from the same field of endeavor, namely the correction and processing of scanned digital image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform image data processing in the interdocument delay period, as taught by Kumashiro, said processing being the processing of the identifier equivalence table, as taught by Azumaya, and thus following the first-pass processing and preceding the second-pass processing. Since, in Azumaya, two-pass processing is performed, the time between the first pass and second pass would be the natural time for the interdocument delay period taught by Kumashiro. The suggestion for doing so would have been that the window labels taught by Azumaya would generally be different for each scanned document sheet since each document would generally have different image data. Therefore, it would have been obvious to

combine Kumashiro with Azumaya in view of Farber and Liguori to obtain the invention as specified in claim 43.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James A. Thompson
Examiner
Technology Division 2625

26 March 2007

DAVID MOORE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600